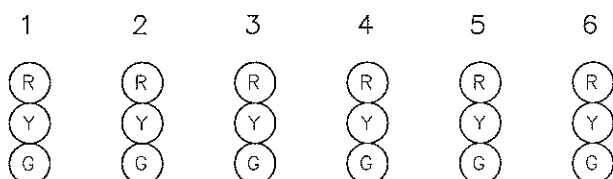


EQUIPMENT LISTS

EQUIPMENT TO BE SUPPLIED BY THE SHA.				
QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION	
1	EA	SP	BASE MOUNTED LOCAL CABINET (SIZE 5) LESS DETECTION EQUIPMENT WITH 8 PHASE ASC II CONTROLLER WITH TELEMETRY	
43	SF	813	FLAT SHEET ALUMINUM SIGNS CONSISTING OF: - 2 EACH D3-2 (N. Mulberry St.) (VAR. " x 16")-MAST ARM MOUNT - 1 EACH D3-2 (ARROW-N. Cannon Ave/ E. North Ave-ARROW)(VAR. " x 32")- MAST ARM MOUNT	
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.				
QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION	
5	CY	205	TEST PIT EXCAVATION	
5	CY	206	REMOVAL OF EXISTING SIDEWALK	
60	LF	SP 555	24 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE	
325	SF	610	4 INCH CONCRETE SIDEWALK	
1	EA	816	INSTALL CONTROLLER AND CABINET- BASE MOUNT	
43	SF	813	INSTALL OVERHEAD SIGN	
6	EA	SP	FURNISH AND INSTALL 12 INCH 1 WAY 3 SECTION (R, Y, G) SIGNAL HEAD HAVING PROPER ADJUSTABLE MAST ARM BRACKET, AND TUNNEL VISORS-PAINTED BLACK	
2	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE	
2	EA	SP	FURNISH AND INSTALL ELECTRICAL HANDHOLE (CITY STANDARD)	
8	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION	
40	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT-RISER	
65	LF	805	FURNISH AND INSTALL 2" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED	
20	LF	805	FURNISH AND INSTALL 3" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED	
15	LF	805	FURNISH AND INSTALL 4" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED	
230	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED	
30	LF	805	FURNISH AND INSTALL 3" SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED	
1	EA	807	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT	
1	EA	SP	FURNISH AND INSTALL 23-FOOT STEEL POLE WITH TWIN 36-FOOT MAST ARMS (CITY STANDARD)-PAINTED GREEN	
1	EA	SP	FURNISH AND INSTALL 23-FOOT STEEL POLE WITH A SINGLE 36-FOOT MAST ARM (CITY STANDARD)-PAINTED GREEN	
3	EA	SP	CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE	
1	EA	SP	AS-BUILT FOR TRAFFIC SIGNAL	
3	EA	804	FURNISH AND INSTALL GROUND ROD-3/4 INCH DIAMETER X 10-FOOT LENGTH	
125	LF	810	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	
175	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE- 1 CONDUCTOR (NO. 4 AWG - THHN/THWN)	
350	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE- 5 CONDUCTOR (NO 14 AWG)	
175	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE- 7 CONDUCTOR (NO 14 AWG)	
1	LS	SP	DELIVERY OF SALVAGED EQUIPMENT	
1	LS	SP	REMOVE AND DISPOSE OF EXISTING EQUIPMENT	
1	LS	SP	REMOVAL OF EXISTING SIGNAL EQUIPMENT TO BE SALVAGED	
NOTE: ALL EQUIPMENT AND/OR MATERIALS TO BE REMOVED BY THE CONTRACTOR, BUT NOT LISTED BELOW, SHALL BECOME THE PROPERTY OF THE CONTRACTOR.				
QUANTITY	UNIT	DESCRIPTION		
1	EA	CONTROLLER AND CABINET		

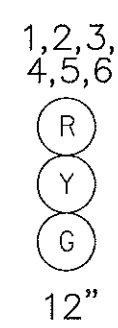
EAST NORTH AVENUE/NORTH CANNON AVENUE
IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

PHASING DIAGRAM

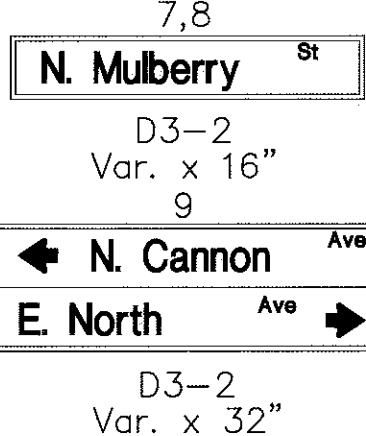


PHASE 2+6	G	G	G	G	R	R
2+6 CHANGE	Y	Y	Y	Y	R	R
PHASE 4	R	R	R	R	G	G
4 CHANGE	R	R	R	R	Y	Y
FLASHING OPERATION	FL	FL	FL	FL	FL	FL

SIGNALS



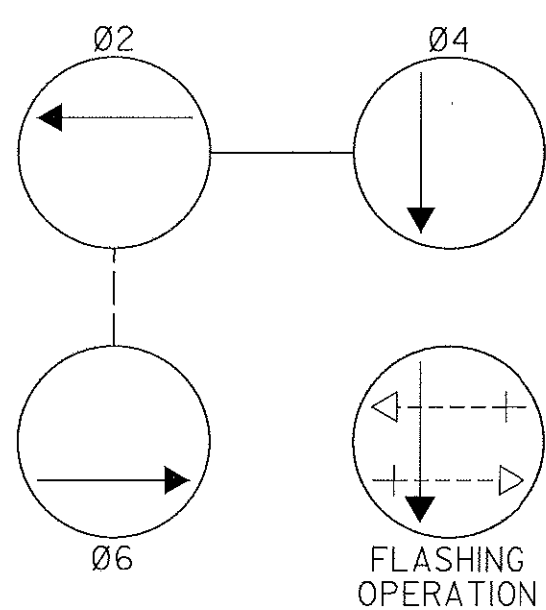
SIGNS



E. NORTH AVE.

N. MULBERRY ST.

NEMA PHASING



PHASING NOTES:

1. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY
2. PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY

N. CANNON AVE.

CONSTRUCTION DETAILS

- INSTALL 23' STEEL POLE (CITY STANDARD), 18' AND 34' MAST ARMS, SIGNAL HEADS, AND SIGNS (NOTE: 1-2" 90-DEGREE P.V.C. BEND)
- INSTALL 2" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).
- INSTALL BASE MOUNTED CABINET, SIZE #5, AND CONTROLLER WITH ALL NECESSARY EQUIPMENT AS SHOWN (NOTE: 2-4", 90-DEGREE P.V.C. BENDS AND 2-2" 90 DEGREE P.V.C. BENDS).
- INSTALL 4" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).
- INSTALL HANDHOLE
- INSTALL HANDHOLE (CITY STANDARD).
- INSTALL 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (SLOTTED).
- INSTALL 23' STEEL POLE (CITY STANDARD), 20' MAST ARM, SIGNAL HEADS AND SIGN (NOTE: 1-2" 90 DEGREE P.V.C. BEND).
- INSTALL 3" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED)
- INSTALL 3" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (SLOTTED)
- REMOVE AND REPLACE EXISTING SIDEWALK.
- INSTALL 24" SOLID WHITE LINE FOR STOP BAR.
- INSTALL 10' OF 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT - RISER AND COIL 25' OF ADDITIONAL CABLE.
- REMOVE EXISTING SPAN WIRE, SIGNALS AND CABLE.
- REMOVE EXISTING STEEL POLE.
- REMOVE EXISTING STEEL POLE, CONTROLLER AND CABINET.

UTILITY LEGEND

— G —	— G —	GAS MAIN
— W —	— W —	WATER MAIN
— S —	— S —	SEWER MAIN
— — — — —	— — — — —	STORM DRAIN
— TV —	— TV —	CABLE TELEVISION
— E —	— E —	ELECTRIC CABLES
— T —	— T —	TELEPHONE CABLES
— A —	— A —	AERIAL CABLES

INTERSECTION DESCRIPTION

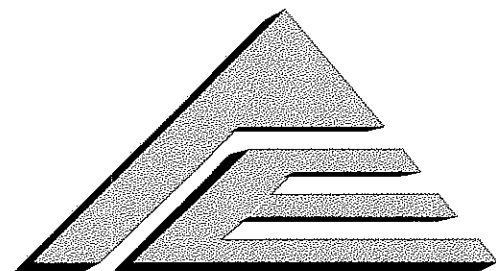
I. GENERAL

THIS INTERSECTION IS NORTH MULBERRY STREET AND EAST NORTH AVENUE/ NORTH CANNON AVENUE. CONSTRUCTION AT THIS INTERSECTION INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC SIGNAL AND INTERCONNECTION WITH THE OTHER SIGNALIZED INTERSECTIONS IN THE NEW CITY-WIDE SYSTEM. IT IS ASSUMED THAT EAST NORTH AVENUE/NORTH CANNON AVENUE RUNS IN AN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA THREE (3) PHASE PRE-TIMED MODE. EASTBOUND EAST NORTH AVENUE AND WESTBOUND NORTH CANNON AVENUE WILL OPERATE CONCURRENTLY. SOUTHBOUND NORTH MULBERRY STREET WILL OPERATE SEPARATELY.

A NEW EIGHT PHASE FULLY ACTUATED CONTROLLER WITH TELEMETRY MODULE HOUSED IN A GROUND MOUNTED CABINET WILL BE INSTALLED.

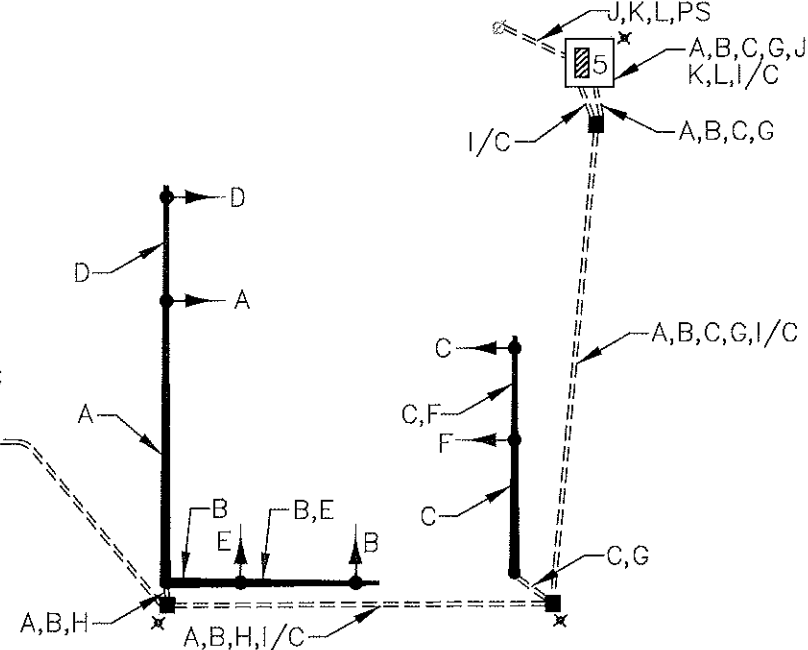


A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-317

WIRING LEGEND

- A - 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
- B - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- C - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- D - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- E - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- F - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- G - 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- H - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- I - 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
- J - 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
- K - 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
- L - 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
- M - 3/4"x10' GROUND ROD
- PS - PROPOSED ELECTRICAL SERVICE
- I/C - INTERCONNECT CABLE

WIRING DIAGRAM



CITY OF HAGERSTOWN, MARYLAND
ENGINEERING DEPARTMENT

LOCATION: East North Ave./
North Cannon Ave. at
North Mulberry St.

TITLE: TRAFFIC SIGNAL UPGRADE

DRAWN BY: A.W. (BASE PLAN) DATE: 8-96

SURVEY BY: A.J.B. DATE: 7-96

SCALES: HORIZONTAL: 1" = 10' VERTICAL: --

APPROVED: FILE NUMBER

DATE: BY: CITY ENGINEER

67-054-02

MDOT - STATE HIGHWAY ADMINISTRATION

Office of Traffic & Safety

TRAFFIC ENGINEERING DESIGN DIVISION

LOG. M. 21MMUL00.75

DRAWN BY: T. COURVILLE

DES. BY: J. LAWRENCE

CHK. BY:

DATE: 05/30/97

SCALE: 1" = 10'

F.A.P. NO. STPG-218-1(7)E

S.H.A. NO. WA9535185

CITY NO. 07-243-332

TS NO.

3700

SHEET NO.

37 OF 66